

Claims

1. A rotation sensor for detecting a rotated-angle variation of a measurement target, comprising:

a stator;

a rotator arranged around said stator in a rotatable manner relative to said stator, so as to detect a rotated-angle variation of a detection target correspondingly to an overlapped state of said rotator with said stator; and

a casing for accommodating said rotator therein;

wherein at least a part of an outer peripheral surface of said rotator is slidable relative to an inner surface of said casing.

2. The rotation sensor of claim 1,

wherein said rotator is protrudedly formed with a shaft for rotating said rotator.

3. The rotation sensor of claim 1,

wherein said rotator is formed with a pulley at a predetermined position of said rotator, and

wherein said rotator is rotatable by a wire which is wound around said pulley and which is drawn out to the exterior of said casing.

4. The rotation sensor of claim 1,

wherein said rotator is provided with an electroconductive plate of an electrically conductive nature;

wherein said stator is provided with an electroconductive plate and a coil core of an electrically

conductive nature; and

wherein there is a seal member interposed between said casing and said rotator, so as to liquid-tightly seal said electroconductive plate of said stator, said electroconductive plate and said coil core of said rotator, from the exterior of said casing.

5. The rotation sensor of claim 2,

wherein said rotator is provided with an electroconductive plate of an electrically conductive nature;

wherein said stator is provided with an electroconductive plate and a coil core of an electrically conductive nature; and

wherein there is a seal member interposed between said casing and said rotator, so as to liquid-tightly seal said electroconductive plate of said stator, said electroconductive plate and said coil core of said rotator from the exterior of said casing.

6. The rotation sensor of claim 3,

wherein said rotator is provided with an electroconductive plate of an electrically conductive nature;

wherein said stator is provided with an electroconductive plate and a coil core of an electrically conductive nature; and

wherein there is a seal member interposed between said casing and said rotator, so as to liquid-tightly seal

said electroconductive plate of said stator, said electroconductive plate and said coil core of said rotator from the exterior of said casing.

7. A displacement detecting apparatus for detecting a traveled distance of a measurement target, by said rotation sensor of claim 1.

8. A displacement detecting method for detecting a traveled distance of a measurement target, by said rotation sensor of claim 1.

9. The rotation sensor of claim 7,
wherein said rotator is protrudedly formed with a shaft for rotating said rotator.

10. The rotation sensor of claim 7,
wherein said rotator is formed with a pulley at a predetermined position of said rotator, and

wherein said rotator is rotatable by a wire which is wound around said pulley and which is drawn out to the exterior of said casing.

11. The rotation sensor of claim 7,
wherein said rotator is provided with an electroconductive plate of an electrically conductive nature;

wherein said stator is provided with an electroconductive plate and a coil core of an electrically conductive nature; and

wherein there is a seal member interposed between said casing and said rotator, so as to liquid-tightly seal said

electroconductive plate of said stator, said electroconductive plate and said coil core of said rotator, from the exterior of said casing.

12. The rotation sensor of claim 9,

wherein said rotator is provided with an electroconductive plate of an electrically conductive nature;

wherein said stator is provided with an electroconductive plate and a coil core of an electrically conductive nature; and

wherein there is a seal member interposed between said casing and said rotator, so as to liquid-tightly seal said electroconductive plate of said stator, said electroconductive plate and said coil core of said rotator from the exterior of said casing.

13. The rotation sensor of claim 10,

wherein said rotator is provided with an electroconductive plate of an electrically conductive nature;

wherein said stator is provided with an electroconductive plate and a coil core of an electrically conductive nature; and

wherein there is a seal member interposed between said casing and said rotator, so as to liquid-tightly seal said electroconductive plate of said stator, said electroconductive plate and said coil core of said rotator from the exterior of said casing.

14. The rotation sensor of claim 8,
wherein said rotator is protrudedly formed with a
shaft for rotating said rotator.

15. The rotation sensor of claim 8,
wherein said rotator is formed with a pulley at a
predetermined position of said rotator, and
wherein said rotator is rotatable by a wire which is
wound around said pulley and which is drawn out to the
exterior of said casing.

16. The rotation sensor of claim 8,
wherein said rotator is provided with an
electroconductive plate of an electrically conductive
nature;

wherein said stator is provided with an
electroconductive plate and a coil core of an electrically
conductive nature; and

wherein there is a seal member interposed between said
casing and said rotator, so as to liquid-tightly seal said
electroconductive plate of said stator, said
electroconductive plate and said coil core of said rotator,
from the exterior of said casing.

17. The rotation sensor of claim 14,
wherein said rotator is provided with an
electroconductive plate of an electrically conductive
nature;

wherein said stator is provided with an
electroconductive plate and a coil core of an electrically

conductive nature; and

wherein there is a seal member interposed between said casing and said rotator, so as to liquid-tightly seal said electroconductive plate of said stator, said electroconductive plate and said coil core of said rotator from the exterior of said casing.

18. The rotation sensor of claim 15,

wherein said rotator is provided with an electroconductive plate of an electrically conductive nature;

wherein said stator is provided with an electroconductive plate and a coil core of an electrically conductive nature; and

wherein there is a seal member interposed between said casing and said rotator, so as to liquid-tightly seal said electroconductive plate of said stator, said electroconductive plate and said coil core of said rotator from the exterior of said casing.